

# Metropolitan Council

## Greenhouse Gas Scenario Planning Tool

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# Climate Action Work at the Metropolitan Council

- Actions to reduce emissions and prepare for climate change
- Developing a **Climate Action Plan**
  - Oriented towards Metropolitan Council operations
- Providing **technical assistance to local governments** on climate change
  - Community Development

# AGENDA

1. What is the **Greenhouse Gas Scenario Planning Tool**?
2. Why develop a **Greenhouse Gas Scenario Planning Tool**?
3. How can cities in the metro region use the **Tool**?

# What is the Greenhouse Gas Scenario Planning Tool?

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# What is the Greenhouse Gas Scenario Planning Tool?

- **How can we meet net zero emissions by 2040?**
- Calculates impact of mitigation strategies over the next 20 years
- Easy to use web application
  - For local governments and counties

# What are the main sources of emissions?



## Building Energy

- Electricity, Natural Gas, Other Fuels



## Transportation

- Passenger Vehicles, Freight



## Waste

- Solid waste, Wastewater



## Land Use Change

# How can we reduce emissions through policy?

## Regulatory Instruments

- Regulations, standards, bans

## Economic Instruments

- Incentives, pricing, penalties, subsidies...

## Information-based Instruments

- Awareness campaigns, nudging...

## Public Investments

- Infrastructure investments, procurement, R&D spending

## Cooperation-based Instruments

- Voluntary commitments, negotiation, networks

## Panning Instruments

- Regional planning, land-use, urban planning

# What is the Greenhouse Gas Scenario Planning Tool?

- Calculates GHG impact of different mitigation strategies
  - ✓ Compact Land Use and Planning
  - ✓ Energy Efficient Technology
  - ✓ Conservation and Sustainable Behavior
  - ✓ Clean Energy Supply
  - ✓ Sequestering Carbon

# What is the Greenhouse Gas Scenario Planning Tool?

- Includes three interdependent modules
  - I. Building Energy
  - II. Transportation
  - III. Green Infrastructure

# GHG Mitigation Strategies



**Compact Land Use  
and Planning**



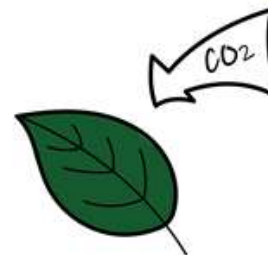
**Energy Efficient  
Technology**



**Conservation and  
Sustainable Behavior**



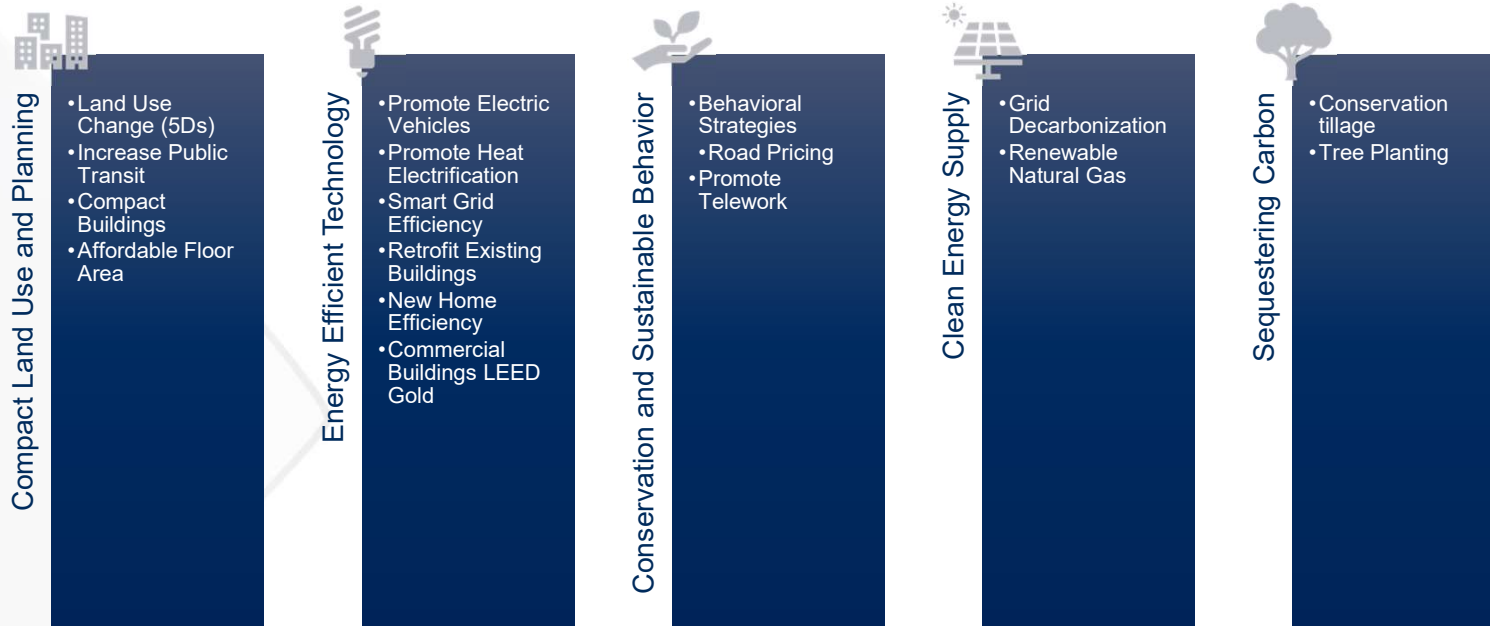
**Clean Energy  
Supply**



**Sequestering  
Carbon**



# GHG Mitigation Strategies



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	Transportation Emissions	Building Energy Emissions	Land Use Change Emission	Waste and Circular Economy Related Emissions
Reducing demand/emissions through <u>compact land use planning</u>	Shorter and Less Frequent Vehicle Trips <b>Less VMT/Year</b>	Smaller and more efficient development <b>Less MWh/Year</b>	Reduced demand for forested land <b>Less CO2e/Year</b>	<i>Enables District Energy Reduces Energy Consumption <b>MWh/Year</b></i>
Reducing demand/emissions through <u>energy efficient technology</u>	Enhanced fuel economy and vehicle electrification <b>Less VMT/Year</b> <b>Less CO2e/VMT/Year</b>	Reduces Energy Consumption <b>MWh/Year</b>	No Effect	<i>No effect</i>
Reducing demand through <u>conservation and sustainable behavior</u> Smart Meters	Reduced Vehicle Miles Traveled <b>VMT/Year</b>	Reduces Energy Consumption <b>MWh/Year</b> Reduce emissions per MWh <b>CO2e/MWh</b>	Reduces Emissions from Land Use Change <b>CO2e/Year</b>	<i>Recycling, Composting <b>CO2e/Year</b></i>
Providing <u>clean energy supply</u>	Reduces Emission Per Vehicle Mile Traveled <b>CO2e/VMT</b> (dependent on EVS)	Reduce emissions per MWh <b>CO2e/MWh</b>	No effect	<i>No effect</i>
<u>Sequestering carbon</u>	No effect	No effect	Increase Carbon Sequestration <b>CO2e/Year</b>	<i>No effect</i>

# Why develop a Greenhouse Gas Scenario Planning Tool?

# Advantages of Greenhouse Gas Scenario Planning

- Leveraging science to reduce emissions
- Optimizing **costs and benefits**
- Exploring multiple scenarios and ways to adjust based on goals and values

# Leveraging Science

- What are the **best datasets** available to Twin Cities local governments?
- What are the **best methodologies** for forecasting greenhouse gas emissions?
- How can **academia** and **government** partner to advance science for effective climate action?

# Optimizing Costs & Benefits

- What strategies have the highest impact on GHG emissions?
- What strategies maximize equity or minimize equity burden?

# Goals and Values

- What strategies rely on collaboration with neighbor communities, the private sector, utility companies, or other forms of government?

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# How can cities in the metro region use the Tool?

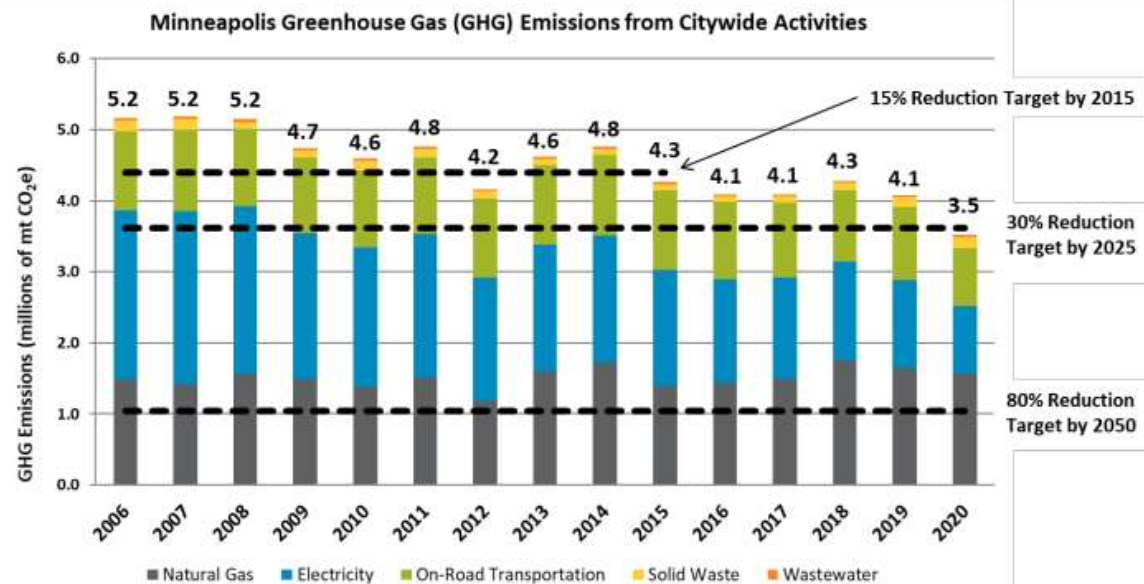
# How can Minneapolis benefit from this tool?

- Identifying strategies that have not been considered
- Exploring alternative scenarios for decarbonization
- Developing a common framework for mitigation with other communities



# Minneapolis has ambitious goals around decarbonization?

- Reducing **80%** of greenhouse gas emissions by 2050
- Clean Energy Partnership



Minneapolis greenhouse gas (GHG) emissions from citywide activities have decreased 32% compared to the 2006 baseline. Upcoming goals include a 30% reduction by 2025 and an 80% or more reduction by 2050.

# Web Application

- Makes it easy to select strategies
- Capacity to expand the tool and add new features
- We welcome your feedback

# Contact Us

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# Thank you

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